

**UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE**

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R077XC060NM

Site Name: High Lime

Precipitation or Climate Zone: 14 to 18 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on nearly level to gently sloping upland plains, benchlands and valley plains. It may also occur on convex, low duned areas on the east side of playa lakes or large enclosed depressions. Slopes may range from 0 to 10 percent but are mostly less than 6 percent. Direction of slope varies and is not significant. Elevation ranges from 3,550 to 4,300 feet above sea level.

Land Form:

1. Alluvial flat

2.

3.

Aspect:

1. N/A

2.

3.

	Minimum	Maximum
Elevation (feet)	3,550	4,300
Slope (percent)	0	10
Water Table Depth (inches)	N/A	N/A
Flooding:	Minimum	Maximum
Frequency	N/A	N/A
Duration	N/A	N/A
Ponding:	Minimum	Maximum
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

The climate of the area is “semi-arid continental”.

The average annual precipitation ranges from 14 to 18 inches. Variations of 5 inches, more or less, are common. Approximately 85 percent of the precipitation falls from April through October. Most of the summer precipitation falls in the form of high intensity-short duration thunderstorms, often accompanied by hailstorms.

Distinct seasonal changes and large annual and diurnal temperature changes characterize temperatures. The average annual temperature is 58 to 61 degrees F with extremes of 30 degrees F below zero in the winter to 110 degrees F in the summer.

The average frost-free season is 190 to 210 days. The last killing frost being in early to mid-April and the first killing frost being in late October to early November.

Temperature and rainfall both favor warm-season perennial plant growth. Occasionally an early spring or late fall storm will occur from a prolonged front. This, along with occasional spring and fall showers, allows the cool-season component to occupy an important part of this plant community. The vegetation on this site can take advantage of the moisture at the time it falls. Because of the soil profile, little moisture can be stored for any length of time. Strong winds blow from February through May from the south, which rapidly dries out the soil during a period critical to cool-season plant growth.

Climate data was obtained from <http://www.wrcc.sage.dri.edu/summary/climsmnm.html> web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	181	216
Freeze-free period (days):	203	238
Mean annual precipitation (inches):	14	18

Monthly moisture (inches) and temperature (°F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.37	0.45	22.0	56.6
February	0.35	0.49	25.8	62.0
March	0.44	0.68	31.5	69.0
April	0.62	1.05	39.6	77.0
May	1.67	2.10	49.4	85.5
June	1.89	2.63	58.4	92.8
July	2.15	2.75	62.1	93.6
August	2.41	2.95	60.7	91.9
September	1.88	2.63	53.9	85.9
October	1.31	1.73	42.6	77.1
November	0.51	0.57	30.5	65.3
December	0.42	0.60	23.1	58.1

Climate Stations:

				Period			
Station ID	<u>291939</u>	Location	<u>Clovis, New Mexico</u>	From:	<u>11/24/10</u>	To:	<u>12/31/01</u>
Station ID	<u>292207</u>	Location	<u>Crossroads #2, New Mexico</u>	From:	<u>07/01/29</u>	To:	<u>05/31/01</u>
Station ID	<u>292854</u>	Location	<u>Elida, New Mexico</u>	From:	<u>05/01/14</u>	To:	<u>12/31/01</u>
Station ID	<u>294026</u>	Location	<u>Hobbs, New Mexico</u>	From:	<u>01/01/14</u>	To:	<u>12/31/01</u>
Station ID	<u>295617</u>	Location	<u>Melrose, New Mexico</u>	From:	<u>04/01/14</u>	To:	<u>12/31/01</u>
Station ID	<u>297008</u>	Location	<u>Portales, New Mexico</u>	From:	<u>01/01/14</u>	To:	<u>12/31/01</u>
Station ID	<u>298713</u>	Location	<u>Tatum, New Mexico</u>	From:	<u>06/01/19</u>	To:	<u>12/31/01</u>

INFLUENCING WATER FEATURES**Narrative:**

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

These are well-drained deep soils with calcic horizons. The surface textures are typically loam and fine sandy loam. The textures of the subsurface layers are fine sandy loam, loam, silty clay loam and clay loam. The calcic layer is normally at depths of less than 20 inches. The soils are calcareous throughout. Permeability is moderate. The available water-holding capacity is moderate to high. The effective rooting depth is greater than 60 inches. The zones of maximum lime accumulation tend to slow water penetration considerably and act to hold water up within the reach of the more shallow-rooted plants. If unprotected by plant cover and organic residues, these soils become wind blown and easily eroded.

Parent Material Kind: Alluvium

Parent Material Origin: Mixed

Surface Texture:

1. Loam
2. Fine sandy loam
3. Sandy loam

Surface Texture Modifier:

1. N/A
2.
3.

Subsurface Texture Group: Loamy

Surface Fragments <=3" (% Cover): N/A

Surface Fragments >3" (% Cover): N/A

Subsurface Fragments <=3" (%Volume): 15 to 35

Subsurface Fragments >=3" (%Volume): N/A

	Minimum	Maximum
Drainage Class:	<u>Well</u>	<u>Well</u>
Permeability Class:	<u>Moderately slow</u>	<u>Moderately slow</u>
Depth (inches):	<u>60</u>	<u>>72</u>
Electrical Conductivity (mmhos/cm):	<u>0.00</u>	<u>4.00</u>
Sodium Absorption Ratio:	<u>0.00</u>	<u>4.00</u>
Soil Reaction (1:1 Water):	<u>6.6</u>	<u>9.0</u>
Soil Reaction (0.1M CaCl2):	<u>N/A</u>	<u>N/A</u>
Available Water Capacity (inches):	<u>6</u>	<u>12</u>
Calcium Carbonate Equivalent (percent):	<u>N/A</u>	<u>N/A</u>

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label:** HCPC

Plant Community Narrative: Historic Climax Plant Community

The potential natural plant community of this site has the aspect of a mixed short and mid-grass prairie. It is dominated by grasses such as the gramas, alkali sacaton and buffalograss with small soapweed yucca evenly distributed and scattered plants of fourwing saltbush being noticeable. A few perennial forbs are present, and annual forb populations fluctuate considerably from year to year with amount and seasonal distribution of rainfall.

Canopy Cover:

Trees	0
Shrubs and half shrubs	3 – 5 %
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	30 – 40
Bare ground	20 – 30
Surface gravel	2 – 5
Surface cobble and stone	0
Litter (percent)	25 – 35
Litter (average depth in cm.)	2 – 3

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	400	660	920
Forb	55	91	127
Tree/Shrub/Vine	45	74	104
Lichen			
Moss			
Microbiotic Crusts			
Total	500	825	1,150

Plant Community Composition and Group Annual Production:**Plant Type - Grass/Grasslike**

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOER4	Black Grama	83 – 124	83 – 124
2	BOCU	Sideoats Grama	165 – 206	165 – 206
3	BOGR2 BOHI2	Blue Grama Hairy Grama	124 – 165	124 – 165
4	SPAI PAOB	Alkali Sacaton Vine-mesquite	41 – 83	41 – 83
5	SEVU2	Plains Bristlegrass	25 – 41	25 – 41
6	SCSC	Little Bluestem	41 – 83	41 – 83
7	SPCR	Sand Dropseed	25 – 41	25 – 41
8	PLMU3	Tobosa	25 – 41	25 – 41
9	ARIST MUTO2	Threeawn spp. Ring Muhly	17 – 41	17 – 41
10	2GRAM	Other Grasses	25 – 41	25 – 41

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	PSCO2 GAPU SPHAE VEPO4 LIPU RACO3	Paperflower Firewheel (Indian Blanket) Globemallow Verbena Dotted Gayfeather Prairie Coneflower	41 – 83	41 – 83
12	SOEL SENEC	Silverleaf Nightshade Groundsel	25 – 41	25 – 41
13	2FORB	Other Forbs	17 – 41	17 – 41

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	YUGL	Small Soapweed Yucca	17 – 25	17 – 25
15	KRLA2	Winterfat	25 – 41	25 – 41
16	ATCA2	Fourwing Saltbush	25 – 41	25 – 41
17	EPHED	Ephedra spp.	8 – 25	8 – 25
18	GUSA2	Broom Snakeweed	8 – 25	8 – 25
19	2SD	Other Shrubs	8 – 25	8 – 25

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other grasses that could appear on this site include: buffalograss, mesa dropseed, spike dropseed, galleta, New Mexico feathergrass, bottlebrush squirreltail and plains lovegrass.

Other shrubs that could appear on this site include: Bigelow sagebrush, mesquite, feather dalea, southwestern rabbitbrush and cholla cactus.

Other forbs that could appear on this site include: plains blackfoot, lemon scurfpea, penstemon, croton, ragweed, trailing fleabane and bladderpod.

Plant Growth Curves

Growth Curve ID 5509NM

Growth Curve Name: HCPC

Growth Curve Description: Mixed short and mid-grass prairie with minor components of shrubs and forbs.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	5	10	25	30	15	7	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitats, which support a resident animal community that is characterized by pronghorn antelope, coyote, black-tailed jackrabbit, black-tailed prairie dog, spotted ground squirrel, yellow-faced pocket gopher, silky pocket mouse, plains harvest mouse, hispid cotton rat, burrowing owl, scaled quail, mourning dove, horned lark, meadowlark, western spadefoot toad, Texas horned lizard, western coachwhip snake and prairie rattlesnake.

Where closely associated with playas, lesser sandhill crane and long-billed curlew nest. Killdeer, Great Plains and green toads are residents. In the playas, desert shrimp and annual fresh-water clams hatch and spawn intermittently. Swainson's hawk hunts during the warmer months and the marsh hawk hunts during winter. Lark bunting is a regular winter migrant.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	Hydrologic Group
Amarillo	B
Arch	B
Berthoud	B
Clovis	B
Drake	B
Potter	C
Vrain	B

Recreational Uses:

This site offers recreation potential for hiking, horseback riding, nature observation, photography, quail and dove hunting, antelope hunting and predator and rodent hunting. Prairie dog towns are often found on this site. Some colorful spring, summer and fall wildflowers are displayed during years with favorable moisture conditions.

Wood Products:

The natural potential plant community of this site affords little or no wood products.

Other Products:**Grazing:**

This site provides forage suitable for grazing during any season of the year. The site in itself lacks protective cover for livestock from winter storms. It is suitable for grazing by all classes of cattle and sheep. In high vegetative condition, it is not well suited for goats because the potential plant community has only minor amounts of the browse plants required by goats. However, goats can be useful to mange or to control abnormal increases in woody plants. In general, cattle grazing will result in a decrease in grasses and palatable perennial forbs with an increase in woody plants. Sheep grazing will result in a decrease in perennial forbs and palatable grasses and an increase in low-value grasses and woody plants. Continuous yearlong grazing or grazing continually during the potential growing season will result in a decrease in the vigor and abundance of sideoats grama, black grama, little bluestem, plains bristlegrass, winterfat and Mormon-tea, with a corresponding increase in small soapweed yucca, blue grama, threeawn spp., ring muhly, broom snakeweed and sand dropseed. Eventually, mesquite and woolly groundsel will invade the site and together with broom snakeweed, will severely impair the grazing value of the site. Well planned systems of deferred grazing by domestic livestock, which vary the seasons of grazing and rest in pastures during successive years, will result in a balanced plant community, providing high-quality forage and browse during all seasons of the year.

Other Information:**Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month**

Similarity Index	Ac/AUM
100 - 76	2.1 – 3.0
75 – 51	2.9 – 4.1
50 – 26	4.2 – 6.5
25 – 0	6.5 +

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock

Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Blue Grama	Bouteloua gracilis	EP	D	D	D	P	P	P	P	P	P	D	D	D
Alkali Sacaton	Sporobolus airoides	EP	D	D	D	D	D	D	P	P	P	D	D	D
Vine-mesquite	Panicum obtusum	EP	D	D	D	P	P	P	P	P	P	D	D	D
Plains Bristlegrass	Setaria vulpiseta	EP	D	D	D	P	P	P	P	P	P	D	D	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	P	P	D	D	D
Winterfat	Krascheninnikovia lanata	L/S	D	D	D	P	P	P	P	P	P	D	D	D
Fourwing Saltbush	Atriplex canescens	L/S	P	P	P	P	P	P	D	D	D	D	D	D
Mormon-tea	Ephedra viridis	L/S	P	D	D	D	D	D	D	D	D	D	P	P
Plains Blackfoot	Melampodium leucanthum	EP	U	U	U	D	D	D	D	D	D	U	U	U
Scarlet Globemallow	Sphaeralcea coccinea	EP	U	U	U	D	D	D	D	D	D	U	U	U
Verbena	Verbena polystachya	EP	U	U	U	D	D	D	D	D	D	U	U	U

Animal Kind: Livestock

Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Indian Blanket (firewheel)	Gaillardia pulchella	EP	U	U	U	D	D	D	D	D	D	U	U	U
Scarlet Globemallow	Sphaeralcea coccinea	EP	U	U	P	P	P	D	D	D	D	D	U	U
Verbena	Verbena polystachya	EP	U	U	U	D	D	D	D	D	D	U	U	U
Upright Prairie Coneflower	Ratibida columnifera	EP	U	U	U	D	D	D	D	D	D	U	U	U
Other Annual Forbs	Various	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Blue Grama	Bouteloua gracilis	EP	D	D	D	P	P	P	P	P	P	D	D	D
Vine-mesquite	Panicum obtusum	EP	D	D	D	P	P	P	P	P	P	D	D	D
Plains Bristlegrass	Setaria vulpiseta	EP	D	D	D	P	P	P	P	P	P	D	D	D
Hairy Grama	Bouteloua hirsuta	EP	D	D	D	P	P	P	P	P	P	D	D	D
Winterfat	Krascheninnikovia lanata	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Fourwing Saltbush	Atriplex canescens	L/S	P	P	P	P	P	P	D	D	D	D	D	D
Mormon-tea	Ephedra viridis	L/S	P	D	D	D	D	D	D	D	D	D	P	P

Animal Kind: Wildlife

Animal Type: Antelope

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Paperflower	Psilostrophe cooperi	EP	U	U	U	D	D	D	D	D	D	U	U	U
Indian Blanket (firewheel)	Gaillardia pulchella	EP	U	U	U	D	D	D	D	D	D	U	U	U
Scarlet Globemallow	Sphaeralcea coccinea	EP	U	U	P	P	P	D	D	D	D	D	U	U
Verbena	Verbena polystachya	EP	U	U	U	D	D	D	D	D	D	U	U	U
Upright Prairie Coneflower	Ratibida columnifera	EP	U	U	U	D	D	D	D	D	D	U	U	U
Winterfat	Krascheninnikovia lanata	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Fourwing Saltbush	Atriplex canescens	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Mormon-tea	Ephedra viridis	L/S	P	D	D	D	D	D	D	D	D	D	P	P
Broom Snakeweed	Gutierrezia sarothrae	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Plains Bristlegrass	Setaria vulpiseta	EP	D	D	D	P	P	P	P	P	P	D	D	D

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: New Mexico

County: Chaves, Curry, De Baca, Lea, Roosevelt

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? Yes ☐ No ☐

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern High Plains 77 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Lea, Roosevelt & Curry.

Characteristic Soils Are:

Amarillo, Arch, Berthoud, Clovis, Drake Potter, Vrain

Other Soils included are:

Site Description Approval:

{PRIVATE} Author

Date

Approval

Date

Don Sylvester

06/05/80

Don Sylvester

06/05/80

Site Description Revision:

{PRIVATE} Author

Date

Approval

Date

Elizabeth Wright

02/21/03

George Chavez

2/24/03